Utah Department of Environmental Quality
Division of Solid and Hazardous Waste
Fact Sheet

SEPTEMBER 1999

CHEMICAL MUNITION DESTRUCTION ACTIVITIES
at the Deseret Chemical Depot, Utah

This Fact Sheet describes the chronology of chemical munitions[1] destruction in Utah.

CHEMICAL MUNITIONS STORAGE

The Deseret Chemical Depot near Tooele, Utah stores approximately 42 percent of the U.S. chemical weapon stockpile (the percentage decreases as chemical munitions are destroyed). Portions of the stockpile are also stored in Alabama, Arkansas, Colorado, Indiana, Johnston Island, Kentucky, Maryland, and Oregon.

In March 1992, the Deseret Chemical Depot received a permit allowing the continued storage of "waste" chemical munitions.

CHEMICAL WEAPONS DESTRUCTION

In 1979, the pilot scale, Chemical Agent Munition Disposal System[2] (CAMDS) began chemical weapon destruction testing and research. CAMDS is also located at the Deseret Chemical Depot. The Army was allowed to operate CAMDS in accordance with applicable hazardous waste rules until a hazardous waste Research Development and Demonstration Permit was issued in 1990.

1. Congressional Action

Federal law mandates that the Army destroy the chemical weapon stockpile. In addition, a chemical arms treaty, the Chemical Weapons Convention, calls for the destruction of chemical munitions by 2007. The U.S. Senate ratified the treaty on April 24, 1997.

2. Destruction Technology

The Army selected incineration as the preferred technology for chemical weapons destruction with concurrence from the National Research Council. The first step in the incineration process is "reverse assembly" where the chemical munitions are dismantled in the reverse order that they were manufactured. The munitions components are then incinerated. The Army developed much of the disassembly and incineration technology based testing at CAMDS.

3. Environmental Impact Statements

In January 1988, the Army released a Programmatic Environmental Impact Statement for the continental U.S. stockpile that considered the following four alternatives:

1) no action - continued storage,
2) destruction onsite at the eight continental U.S. storage locations,
3) transportation of chemical munitions to two regional disposal sites for destruction, or
4) transportation of chemical munitions to a national destruction site.

The Deseret Chemical Depot was a storage or destruction site in all four alternatives.

The Record of Decision was issued in February 1988 and concluded that the on-site destruction of chemical munitions would pose the least risk of human health impacts than the other alternatives.

In May 1989, the Army released a site specific Environmental Impact Statement for the onsite disposal at Deseret Chemical Depot. The Record of Decision in June 1989 verified the decision to proceed with the onsite destruction of the chemical munitions stored at the Deseret Chemical Depot.

4. Hazardous Waste Permit and Other Requirements

The Utah Division of Solid and Hazardous Waste issued the Tooele Chemical Agent Disposal Facility (TOCDF) hazardous waste permit in June 30, 1989. TOCDF also has an air quality permit issued by the Utah Division of Air Quality. In addition, the Chemical Stockpile Emergency Preparedness Plan (CSEPP) must also be funded and executable.

Congress required that chemical destruction data generated at Johnston Island be analyzed prior to operations in the continental U.S. facilities. The Utah hazardous waste permit also required the Army to incorporate applicable design and operational improvements learned from operating the Johnston Island facility prior to operating TOCDF.

Surrogate Testing

Prior to agent operations, TOCDF was required to demonstrate the ability of each incinerator to destroy a chemical that is much more difficult to burn than chemical agents.

Agent Testing

Prior to treating a specific chemical agent, each incinerator at TOCDF and CAMDS must demonstrate the ability to effectively destroy that chemical agent .

Risk Assessment

The Utah Division of Solid and Hazardous Waste is continually evaluating the incremental health and environmental risk posed by the operation of the TOCDF and the CAMDS[3]. The risk assessment is used to determine if operating conditions are protective of human health and the environment.

Continuous Monitoring

TOCDF and CAMDS must continuously monitor agent emissions in the incinerator stack. Agent monitoring equipment is designed to measure stack concentrations at a level developed by the U.S. Surgeon General to be protective of human health. Agent feed to the incinerators is halted if any agent is detected in the incinerator's stack. The incinerator cannot resume processing agent until the incinerator can operate without releasing agent.

Inspections

The hazardous waste permit requires TOCDF and CAMDS to 1) conduct daily, weekly, monthly, and annual procedural and equipment inspections; and 2) report and respond to any releases or equipment failure.

Oversight

The Utah Division of Solid and Hazardous Waste evaluates the effectiveness and compliance of TOCDF, CAMDS, and the Deseret Chemical Depot hazardous waste management activities. The Division has continuous access to operating data by computer at the Division offices and frequently inspects at the facility to ensure compliance.

Additional Information

For additional information regarding the Division of Solid and Hazardous Waste's role in the chemical demilitarization activities contact:

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[1] See Chemical Agents Fact Sheet

[2] See Chemical Agent Munitions Disposal System Fact Sheet

[3] See Risk Assessment Fact Sheets